

Fig. 2.

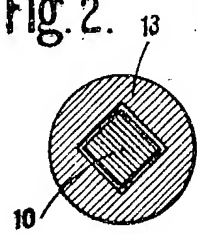


Fig. 1.

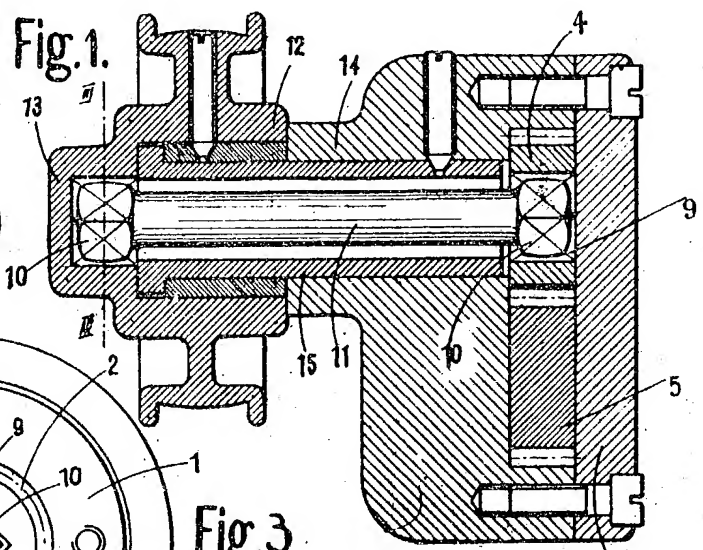


Fig. 3.

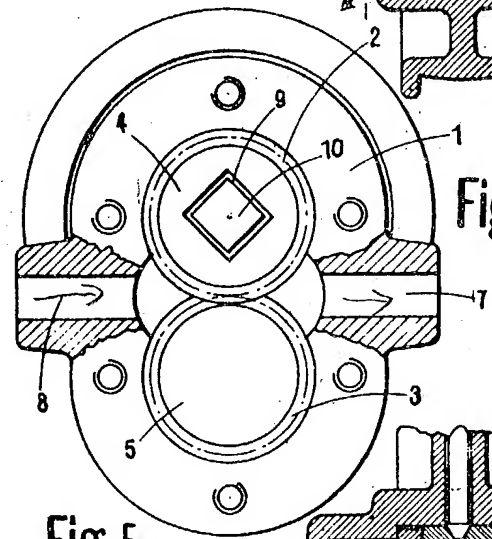


Fig. 4.

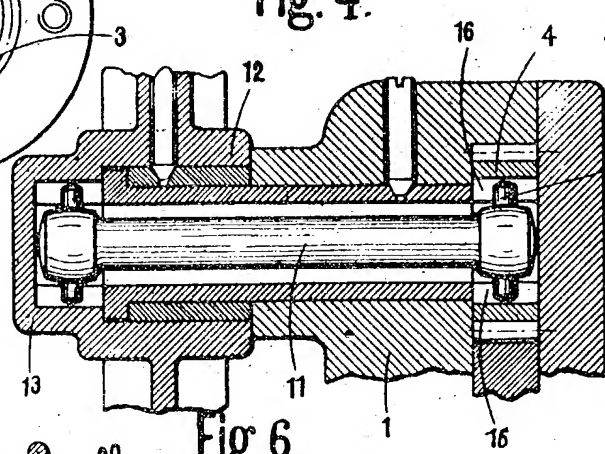


Fig. 5.

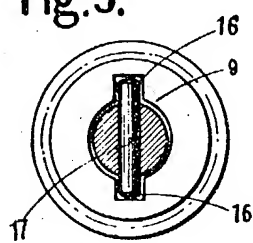
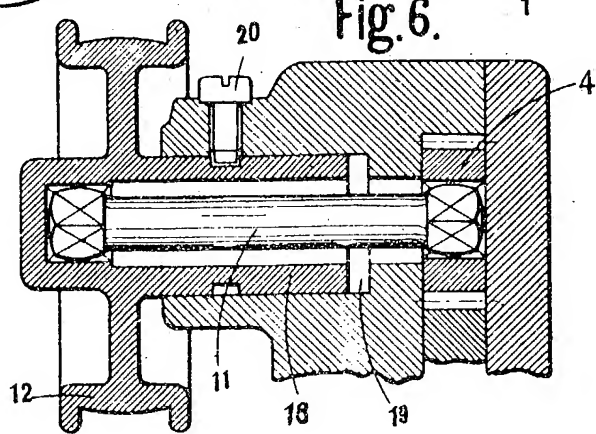


Fig. 6.



Gears float allowing diach press. to urge down and seal with peripheral wall on inlet side of pumping chamber.

[This Drawing is a reproduction of the Original on a reduced scale.]

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# PATENT SPECIFICATION



Convention Date (Germany): Feb. 4, 1926.

Application Date (in United Kingdom): Jan. 26, 1927. No. 2307/27.

Complete Accepted: Aug. 4, 1927.

## COMPLETE SPECIFICATION.

### Rotary Pump.

I, ANDRÉ BECHLER, Moutier Canton of Berne (Switzerland), Engineer, a citizen of the Confederation of Switzerland, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

10 This invention relates to geared pinion pumps of the type comprising a pair of toothed wheels gearing with one another and lodged in recesses which closely envelop them, the liquid entering the casing being carried round between the teeth of said wheels and delivered through an outlet.

15 It is a known fact that rotary pumps especially pinion pumps lose their fluid-tightness owing to the wear and consequent shortening of the teeth and also owing to the wear in a radial sense of the contact surface between wheels and casing. This disadvantage connected with loss of fluid-tightness is known to the trade.

20 The object of the present invention is a pinion pump which is rendered fluid-tight automatically through the liquid pressure that occurs between the teeth of the wheels, such wheels being permitted to adjust themselves to take up the wear.

25 The present invention consists in a rotary gear pump especially adapted for the supply of viscous solutions of cellulose for the manufacture of artificial silk, characterised in that the driving pulley is mounted on a sleeve supported within the pump casing and is operatively connected to the pump gears by means of a shaft which traverses the said sleeve and loosely engages at its ends with the driving pulley and one of the pump gears respectively so as to allow adjustment of the latter in order to take up wear.

[Price 1/-]

In connection with a geared pinion pump used in apparatus for spinning artificial threads, it has been proposed where the pump casing has been spaced apart from the driving mechanism, to drive the pinion through a connecting shaft having a universal or Hooke's joint at each end in order to allow for non-alignment between the driving centre and the pinion.

The annexed drawing represents as examples three working forms of a rotary pump according to the present invention.

30 The Figures 1, 2 and 3 relate to a first form and represent a section according to a plane which includes the axes of the pinions, a section according to line III—III of Figure 1, and a front view of the pump with its cover removed.

35 The Figures 4 and 5 relate to a second working form and represent corresponding sections and views as Figures 1 and 2.

Figure 6 relates to a third working form.

40 The casing of the first form possesses two recesses 2 and 3 an upper one with the driving pinion 4 and a lower with the driven pinion 5. Both pinions mesh with each other. A cover plate 6 closes the recesses. The delivery neck is marked with 7 and the suction neck with 8.

45 A square cut-out 9 is made in the centre portion of the driving pinion 4, and the head 10 of a shaft 11 which connects this pinion with the driving pulley 12 is introduced into said cut-out. The head 10 is smaller than said cut-out so that the shaft is enabled to swing out with regard to the pinion 4 held rigidly within its recess.

50 The driving pulley 12 has an eye in the centre of one of its side faces and a cut-out contained therein similar to that of the driving pinion 4. The

driving pulley 12 is mounted on the end of a sleeve 15 carried by a neck 14 of the casing.

5 It is evident that the play left between head 10 and cut-out 9 causes the driving pinion under the effect of the pressure of the liquid passing between it and the driven pinion to give way to press closely against the circumferential wall of its 10 sinking. Thereby the tight fit becomes effective especially in the case when as in certain pumps the axial distance between the pinions gets changed by displacing a part of the recess with respect 15 to the rest of the casing.

The working form shown in Figures 4 and 5 presents a similar arrangement. Here, however, the driving pinion has radial slots 16 for receiving the pin 17 20 passing through the shaft 11. A similar arrangement is made at the other driving end of the shaft 11, the head of this shaft being encased within the hollow of an eye 13, formed in the side face of the 25 pulley.

According to the working form represented in Figure 6 the driving of the driving pinion 4 is obtained by means of a shaft 11 shaped similar to that of 30 Figure 1. The hub of the driving pulley 12 has, however, a hollow extension 18 by means of which it is journalled within a bore 19 of the casing, and maintained therein by a stud 20.

35 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

40 1. Rotary gear pump especially adapted for the supply of viscous solutions of cellulose for the manufacture of

artificial silk, characterised in that the driving pulley is mounted on a sleeve supported within the pump casing and is 45 operatively connected to the pump gears by means of a shaft which traverses the said sleeve and loosely engages at its ends with the driving pulley and one of the pump gears respectively, so as to 50 allow adjustment of the latter in order to take up wear.

2. Rotary pump as claimed in Claim 1, characterised in that the shaft operatively connecting the driving pulley to 55 the pump gears, is provided with square headed ends which engage loosely with square recesses in the pinion and pulley.

3. Rotary pump as claimed in Claim 1, characterised in that the shaft operatively connecting the driving pulley to 60 the pump gears, is provided at both its ends with pin-like projections which loosely engage with corresponding slots within the pinion and pulley. 65

4. Rotary pump as claimed in Claim 1, characterised in that the driving pulley is provided on its side face with a central 70 eye which serves as a pivot for the swinging movement of the connecting shaft.

5. Rotary pump as claimed in Claim 1, characterised in that the sleeve supported within the pump casing is formed 75 integral with the hub of the pulley and rotates with the latter, means being provided for retaining the rotating sleeve within the pump casing.

6. The improved rotary pump substantially as described with reference to the 80 accompanying drawings.

Dated this 26th day of January, 1927.

MARKS & CLERK.